Injury and Burnout in Australian Athletes

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Summary. – This study explored the relationship between injury and burnout in a sample of 264 local to international Australian athletes (124 males and 140 females). Injury can be a stressful experience for athletes, and coupled with the demands of rehabilitation could increase feelings of burnout. Alternatively, for some athletes the break from training/competing caused by injury could alleviate burnout symptoms. Participants completed a demographic questionnaire and a modified Maslach Burnout Inventory (MBI). Independent samples t-tests indicated that currently injured athletes (n = 150) had significantly lower burnout scores than currently uninjured athletes (n = 113). Positive correlations were found between number of injuries experienced and burnout. Possible explanations are that injury can provide a temporary break from intense sporting involvement and lower burnout, but multiple injuries could have a cumulative effect on burnout.

Burnout is the "psychological syndrome of emotional exhaustion, depersonalization, and reduced sense of performance accomplishment" (Maslach & Jackson, 1984, p. 134). Burnout has been found to effect a range of occupations, particularly in relation to helping professions, including nurses (Allen & Mellor, 2002), teachers (Evers, Brouwers, & Tomic, 2002), health professionals (Montgomery, Panagopoulou, & Benos, 2005), and volunteer counsellors (Bakker, Van Der Zee, Lewig, & Dollard, 2006). Burnout, however, is not limited to the helping professions, but has also been found in athletes (e.g. Raedeke, 1997; Cresswell & Eklund, 2006, 2007). Research has suggested that athletes competing at higher levels are likely to experience burnout more than athletes competing at lower levels (e.g. Gould et al., 1996; Raedeke & Smith, 2004; Lemyre, Treasure, & Roberts, 2006). Previous research on athlete burnout in a cross-section of athletes who range in age and sporting ability and research with Australian athletes has not been reported (Goodger, Gorely, Lavallee, & Harwood, 2007).

The early literature on athlete burnout focused largely on developing conceptual models of burnout (e.g. Smith, 1986; Silva, 1990; Raedeke, 1997). These models suggested that stress was a major factor in athlete burnout, particularly for Smith's (1986) cognitive-affective model. Factors that have been investigated in regards to stress and athlete burnout have included training (Silva, 1990), level of competition (Gould, Udry, Tuffey, & Loehr, 1996), living up to parental expectations (Cohn, 1990; Harlick & McKenzie, 2000), not being selected in teams (Cresswell & Eklund, 2006), anxiety (Wiggins, Lai, & Deiters, 2005), and perceived sport-related and financial hassles (Cresswell & Eklund, 2004).

A source of stress that has not been adequately addressed in relation to burnout in sport is injury. The Andersen and Williams (1988) model of sports injury

indicated that stress is a major factor that influences proneness to or risk of injury. However, injury may also initiate the stress process (Udry, Gould, Bridges, & Tuffey, 1997). That is, an injury can have a psychological impact on athletes that is manifested in terms of cognition, affect, and behaviour (Brewer, 2001), including increased stress (Wiese-Bjornstal, Smith, Shaffer, & Morrey, 1998) and perhaps burnout. After an injury, stress and burnout could also be produced by the demands of a rehabilitation program, further adding to feelings of physical and emotional exhaustion and negative attitudes towards sport. If high levels of stress are maintained for extended periods, athletes may experience burnout (Rotella, Hanson, & Coop, 1991). Because stress is linked to burnout, and injury may initiate stress, it is possible that injury is also linked to the experience of burnout in sport.

It is also possible that the experience of more than one injury could have a cumulative effect on burnout. Research on rugby union players indicated that players who reported more injuries had higher feelings of Physical and Emotional Exhaustion, Sport Devaluation, and reduced Accomplishment compared to rugby union players who reported fewer injuries over a thirty week season (Cresswell & Eklund, 2006). This is further reinforced by Cresswell and Eklund (2007) who reported that players felt that injuries and frustration at repeated injuries contributed to their feelings of burnout. That is, burnout may occur as a chronic response to prolonged ongoing stress in comparison to occasional reactions to ongoing stressors (Vealey, Armstrong, & Comar, 1998).

This study examined athlete burnout as measured by scores on the subscales of a modified version of the MBI in a range of Australian athletes who were either currently injured or uninjured. It was expected that feelings of burnout would be higher in athletes who had competed at a national and international level compared to

local and state level athletes. It was hypothesised that Physical and Emotional Exhaustion and Depersonalization would be higher and Sporting Accomplishment would be lower in athletes who were currently injured compared to athletes who were currently uninjured. It was also hypothesised that there would be a positive relationship between the number of injuries an athlete had experienced and Physical and Emotional Exhaustion and Depersonalization, and a negative relationship between the number of injuries experienced and Sporting Accomplishment.

Method

Participants

Participants were 264 Australian competitive athletes (124 male and 140 female) with a mean age of 37.5 years (*SD* = 15.7), who were recruited from local, state, and national sporting organisations. The main sports participated in were track and field, Australian Rules Football, hockey, triathlon, tennis, soccer, squash, and netball. Participants had competed at local (30.3%), state (22.3%), national (24.6%), and international level (22.8%). Participants stated they were currently uninjured (43%) or were suffering some form of injury (53%), with overtraining (19.3%), athletic injury (78.7%), and nonathletic reasons (2%), provided as the causes of injury. Participants had been involved in sport for an average of 21.7 years (*SD* = 14.4). Participants reported an average of 6.8 (*SD* = 8.9) previous injuries in their sporting career. Participants who were currently injured (*n* = 150) reported an average of 5.9 (*SD* = 7.7) previous injuries, while the participants who were currently uninjured (*n* = 113) reported an average of 7.9 (*SD* = 10.2) previous injuries. On average, participants who were uninjured trained and competed 15.1 hours (*SD* = 8.9) per week, while participants who stated that they were currently injured trained and competed on average 8.2 hours (*SD* = 6.2) per week.

Measures

Demographic questionnaire. The questionnaire was self-report, and included questions on age, level of competition, and hours training/competing per week.

Injury. Current injury status was assessed by response to the question "Are you currently injured?" with options of "yes" or "no". Cause of injury was assessed by response to the question, "If currently injured, what was the nature of the injury with options of "overtraining", "athletic injury", or "non-athletic reasons". Participants were also asked to report on the number of sporting injuries they had experienced during their sporting career.

Maslach Burnout Inventory-HSS (MBI). This inventory provides three domain scores: Emotional Exhaustion, Depersonalization, and Personal Accomplishment. The measure was adapted for use in sport, which resulted in the domains of Physical and Emotional Exhaustion, Depersonalization, and Sporting Accomplishment. Examples of statements for each of the adapted scales are: "I feel tired at the end of training", and "I feel burned out from my sport" (Physical and Emotional Exhaustion), "I don't care what happens to some team or club mates", and "I've become more callous toward people since I took up sport" (Depersonalization), and "I have accomplished many worthwhile things in my sport", and "I feel exhilarated after working closely with my team or club mates" (Sporting Accomplishment). The alpha coefficients in the current study were .78 (Physical and Emotional Exhaustion), .61 (Depersonalization), and .78 (Sporting Accomplishment). The internal consistency of Depersonalization is a concern, and this should be kept in mind when interpreting the findings in relation to this subscale. Physical and Emotional Exhaustion and Sporting Accomplishment had acceptable internal consistencies.

Procedure

Following ethical approval from Charles Darwin University, an initial letter was sent to sporting organisations asking them to contact the researchers if they were interested in participating in the study. Questionnaires were then forwarded to sporting organizations for distribution on one occasion. Standard consent procedures were followed. A total of 612 questionnaires were released to potential participants, 264 were returned for a response rate of 43%.

Statistical Analysis

One-way ANOVA's were conducted to compare burnout scores between athletes who had competed at different levels. Independent sample t-tests were conducted to compare the scores of burnout in currently injured and uninjured athletes. Correlational analyses were conducted to examine the relationship between burnout and number of injuries.

Results

Overall scores of Physical and Emotional Exhaustion (M = 12.5, SD = 7.3), Depersonalization (M = 3.2, SD = 3.4), and Sporting Accomplishment (M = 28.8, SD = 9.0) were low compared to MBI norms for participants from a range of occupations, including teachers, social service workers, medical workers, and mental health workers (Maslach, Jackson, & Leiter, 1996). Maslach et al. (1996) reported that scores of less than 16 for Emotional Exhaustion were low, scores of greater than 6 for Depersonalization were low, and scores of 32-38 for Personal Accomplishment were average. The descriptive statistics and ANOVAs for competitive level presented in Table 1 revealed that Physical and Emotional Exhaustion and Depersonalization were higher at higher levels of competition, whereas, there were no significant differences between competitive levels for Sporting Accomplishment. As displayed in Table 2,

currently injured athletes had significantly lower Physical and Emotional Exhaustion, Depersonalization, and Sporting Accomplishment scores than athletes who were currently uninjured. The effect size for Physical and Emotional Exhaustion was large; however, the effect sizes for Depersonalization and Sporting Accomplishment were small. Correlational analysis revealed that there were statistically significant relationships between the number of injuries athletes had experienced and all three burnout sub-scales: Physical and Emotional Exhaustion (r = 13, p<.05), Depersonalization (r = .20, p<.01), and Sporting Accomplishment (r = 22, p<.01).

Discussion

This study examined athlete burnout as measured by scores on the subscales of a modified version of the MBI in a range of Australian athletes who were either currently injured or uninjured. Burnout involves higher feelings of Physical and Emotional Exhaustion and Depersonalization, and lower feelings of Sporting Accomplishment. As expected, Depersonalization and Physical and Emotional Exhaustion scores were higher for athletes who had participated at higher competitive levels than athletes who had competed at lower levels, however, there was no difference between competitive levels for Sporting Accomplishment. Unexpectedly, athletes who were currently injured had lower scores for Physical and Emotional Exhaustion and Depersonalization than athletes who were currently injured. They were also lower on Sporting Accomplishment. As expected, there was a significant positive relationship between Physical and Emotional Exhaustion and Depersonalization and the number of injuries experienced, however, against expectations, there was also a significant positive relationship between Sporting Accomplishment and the number of injuries experienced.

In general, the scores of burnout in the current study were lower than previously published norms for the MBI in other professions (Maslach, et al., 1996). Previous sport research has also reported low burnout scores when using the MBI (e.g., Gustafsson, Kentta, Hassmen, & Lundqvist, 2007). One possible explanation for low burnout scores in athletes is related to the voluntary nature of sport, especially at lower levels. In other fields, volunteers have been found to have low levels of burnout compared to other workers (e.g., Chacon Fuertes & Vecina, 2000). Chacon Fuertes and Vecina (2000) suggested that volunteers are able to end their involvement as soon as they feel uncomfortable or dissatisfied, whereas professionals may feel obliged to remain at work for longer, causing the intensity of burnout symptoms to increase. Likewise, athletes, especially those at lower competitive levels, can drop out when the signs and symptoms of burnout increase, which could lead to lower average burnout scores than in professions where dropping out may be more difficult. The burnout scores are also likely to be lower than in other studies of burnout because a range of different competitive levels were assessed, rather than just high-level competitors. Previous research has suggested that athletes competing at higher levels are likely to experience burnout more than athletes competing at lower levels (e.g. Gould et al., 1996; Raedeke & Smith, 2004; Lemyre, Treasure, & Roberts, 2006).

When examining differences in burnout for different competitive levels, it was revealed that Physical and Emotional Exhaustion and Depersonalization were significantly higher for athletes competing at higher levels than for athletes competing at lower levels, supporting previous findings (e.g. Gould et al., 1996; Raedeke & Smith, 2004; Lemyre, Treasure, & Roberts, 2006). It is likely that athletes, who compete at national and international level, train and compete at a higher intensity, train more often and for longer periods of time, which could lead to higher Physical

and Emotional Exhaustion. Although there were differences for Physical and Emotional Exhaustion and Depersonalization, there was no significant difference for Sporting Accomplishment between the athletes at different competitive levels, with a small effect size. This may be because athletes may compare themselves to athletes in the same level of competition, rather than comparing their sporting accomplishments to athletes at a higher or lower competition level.

Scores on all three burnout subscales were significantly higher in athletes who were currently uninjured than athletes who were currently injured. The effect size for Physical and Emotional Exhaustion was large, whereas the effect sizes for Depersonalization and Sporting Accomplishment were small. The uninjured athletes reported spending more time involved in sport (either training or competing each week), which might have the subsequent effect of increasing burnout scores, especially feelings of Physical and Emotional Exhaustion. For example, Dale and Weinberg (1990) suggested that the long hours of practice, which required physical and mental energy and the pressure to perform on game day, seemed to be the primary cause of burnout. Athletes who were currently injured also may have been able to have a break from sporting involvement, thereby potentially reducing their burnout scores. The higher scores for Sporting Accomplishment for currently uninjured athletes possibly occurred because those who were currently injured were prevented from participating by the injury and, therefore, were unable to experience feelings of achievement in their sport. Consequently, it appeared that being currently injured was not related to increased burnout, but rather, was associated with lower burnout.

Experiencing an injury may provide a temporary break from intense sporting involvement and lower burnout; however, the results indicated that suffering multiple injuries over a period of time could have a cumulative effect on burnout. It must be

considered that the results indicated a relationship between burnout and number of injuries experienced, however, they do not resolve the direction of that relationship. The finding of a relationship is consistent with previous studies. For example, in two studies with rugby players Cresswell and Eklund (2005) reported that injuries were related to Physical and Emotional Exhaustion and Cresswell and Eklund (2006) reported that players who experienced more injuries also had lower Accomplishment, and higher Physical and Emotional Exhaustion and Sport Devaluation than players who experienced fewer injuries. It could be that the number of injuries experienced over a sporting career influences athlete burnout, specifically athletes who have experienced more injuries may be more prone to athlete burnout. It could be that with each subsequent time an athlete experiences an injury, feelings of stress build up, with each injury adding to feelings of stress. Further, the distress of dealing with injuries on a regular basis may contribute to feelings of frustration and exhaustion (Cresswell & Eklund, 2005) and to potential negative attitudes towards sport. Whereas Udry et al. (1997) suggested that injury may initiate the stress process, the results of the current study, suggest that rather than one injury initiating increased burnout, experiencing more injuries may have a cumulative effect on stress and feelings of Physical and Emotional Exhaustion and Sport Devaluation. A somewhat surprising result, and one which conflicts with previous investigations (e.g., Cresswell & Eklund, 2006), was that scores for Sporting Accomplishment were positively related to the number of injuries experienced. It was expected that feelings of Sporting Accomplishment might also be restricted by an increased experience of injuries, given that the injuries are likely to restrict training and competition. The unexpected finding could be due to athletes associating sport with injury and having an expectation that injuries are simply a part of participation that may not prevent them from achieving in

their sport. It is also possible that these athletes may have gained greater feelings of Sporting Accomplishment by having had to overcome more injuries so that they could perform.

There were a number of limitations of the study. The use of mail self-report measure methodology, while allowing for a relatively large sample (Mills & Huebner, 1998), has several inherent limitations. Self-report data is potentially subject to an impression-management bias (Kendzierski, 1990). For example, participants may try to present themselves positively. A further limitation is that of self-selection. Participants, who completed and returned the questionnaires, may be qualitatively different to the participants who did not. While the response rate of 43% was acceptable, it could be that those participants who did not reply may have higher scores of burnout, and felt the questionnaire was an additional burden (Bakker et al., 2006). Depending on what sport the participants were involved in, seasonality may have had a bearing on the results. That is, athlete burnout may fluctuate for athletes over a sporting season. For example, at the start of a season participants might report lower levels of burnout, in the middle of a season participants might report higher Physical and Emotional Exhaustion and Depersonalization, and at the end of the season participants might report higher Sporting Accomplishment and Physical and Emotional Exhaustion (Dale & Weinberg, 1989). Further, the severity of injury was not investigated or the length of time that the participant had been injured for; it is possible that athletes with severe and/or long term injuries may experience athlete burnout differently than athletes with mild and/or short term injuries. In addition, because the injury severity was not measured, some participants may have had relatively minor injuries which may have allowed them to continue participating while still injured. Because they were still training and competing while injured, the

stress experienced for these participants may have been different compared to those participants who were prevented from training and competing from this injury. The study involved a cross-sectional survey completed at one specific point in time, this could mean that athletes completed the questionnaire when they were uninjured, currently injured, early or late in the rehabilitation process, or had overcome an injury. Thus, we do not know how long ago previously injured participants had sustained their injury or what phase of the rehabilitation process currently injured participants were in." A final limitation was that the study was cross-sectional rather than longitudinal, and, consequently did not investigate changes in burnout over time.

Athlete burnout can have a significant effect on athletes, including decreased motivation and self-esteem and even withdrawal from sport (Gould et al., 1996; Henschen, 1998; Raedeke & Smith, 2004). Injuries are a common occurrence in athletes and the effect injuries have on the burnout levels of athletes is not fully understood. The influence of injury on burnout should be further examined, particularly in those athletes who experience a number of injuries through their sporting involvement.

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Table 1

Summary of Burnout Scores by Competitive Level.

	Local (*n*=80)		State (*n*=59)		National (*n*=65)		International (*n*=60)		*F*	η^2
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*		
Physical and Emotional Exhaustion	8.5	5.1	12.4	6.6	13.9	7.5	14.4	7.8	16.72*	.16
Depersonalization	1.9	2.6	3.7	3.6	3.2	3.1	4.3	3.9	6.76*	.07
Sporting Accomplishment	27.7	8.8	27.9	9.0	28.5	9.0	31.2	8.9	2.07	.02

*p<.001

Table 2

Burnout in Currently Injured (n = 150) and Currently Uninjured (n = 113) Athletes

	Injured		Uninjured		t	η^2
	M	*SD*	*M*	*SD*		
Physical and Emotional Exhaustion	10.4	6.4	15.3	7.6	-5.6***	.11
Depersonalization	2.6	3.1	4.0	3.7	-3.4**	.04
Sporting Accomplishment	27.7	9.4	30.3	8.3	-2.3*	.02

*p<.05, **p<.01, ***p<.001